

1.) $12a^2 + 16a$

$12a^2$
② ↑ 6
② ↑ 3

$16a$
② ↑ 8
② ↑ 4
② ↑ 2

$12a^2 = 2 \cdot 2 \cdot 3 \cdot a \cdot a$

$16a = 2 \cdot 2 \cdot 2 \cdot 2 \cdot a$

Step 1: Find the GCF of $12a^2$ and then $16a$.

Step 2: Write each term as the product of the GCF & its remaining factors.

GCF = $2 \cdot 2 \cdot a$

GCF = $4a$

$4a(3a) + 4a(4)$

$4a(3a + 4)$

$$2.) 15x + 25x^2$$

$$15x$$

3 5

$$25x^2$$

5 5

$$15x = 3 \cdot 5 \cdot x$$
$$25x^2 = 5 \cdot 5 \cdot x \cdot x$$

$$\text{GCF} = 5x$$

$$5x(3) + 5x(5x)$$

$$5x(3 + 5x)$$

$$5x(3) + 5x(5x)$$

$$15x + 25x^2$$

$$3.) 18cd^2 + 12c^2d + 9cd$$

$$18cd^2$$

$\textcircled{2}^{\wedge} 9$
 $\textcircled{3} \textcircled{3}$

$$12c^2d$$

$\textcircled{2}^{\wedge} 6$
 $\textcircled{2} \textcircled{3}$

$$9cd$$

$\textcircled{3}^{\wedge} 3$

$$18cd^2 = 2 \cdot 3 \cdot 3 \cdot c \cdot d \cdot d$$

$$12c^2d = 2 \cdot 2 \cdot 3 \cdot c \cdot c \cdot d$$

$$9cd = 3 \cdot 3 \cdot c \cdot d$$

$$\text{GCF} = 3cd$$

$$3cd(6d) + 3cd(4c) + 3cd(3)$$

$$3cd(6d + 4c + 3)$$